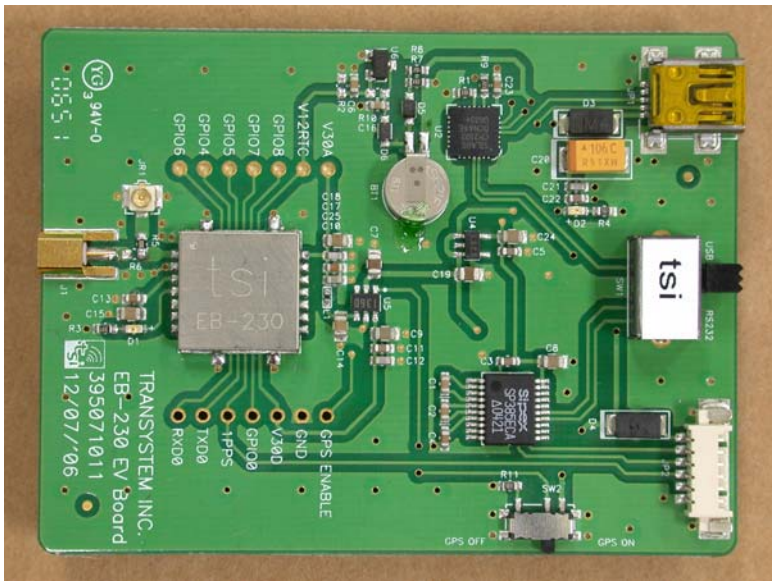
EB-230 GPS Engine Board AN-01
Evaluation Kit User's Manual



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Ver 1.1

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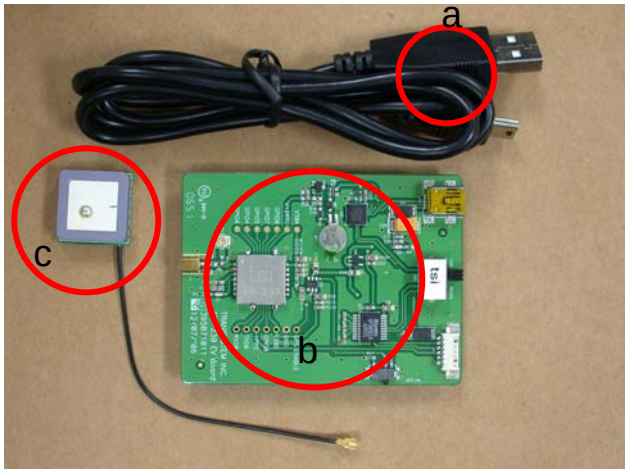
1 Introduction

EB-230 evaluation kit is an user friendly tool for your evaluation of TSI's EB-230 GPS engine board. With its miniature size, low power consumption and superior performance, EB-230 is your ultimate choice for all embedded applications such as :

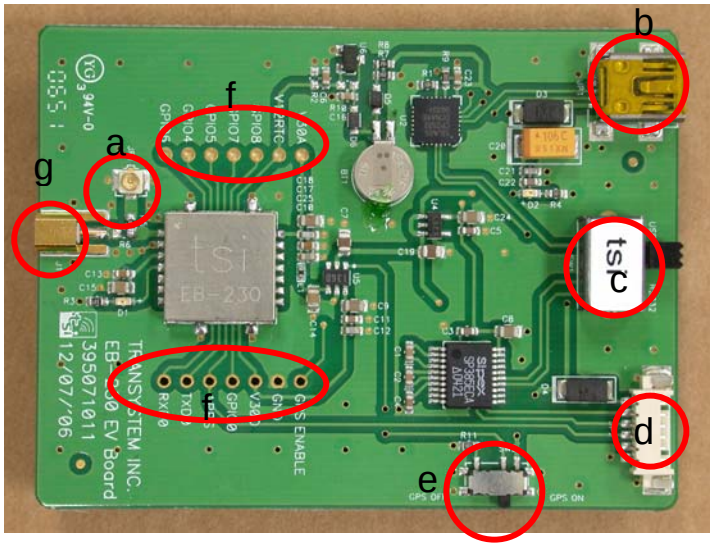
- Handheld devices (PDA, Smart phone…)
- Automotive and Marine Navigation
- Automotive Navigator Tracking
- Emergency Locator
- Geographic Surveying
- Personal Positioning
- Sporting and Recreation

2 When you open it



a. USB Cable x1
b. EB-230 Evaluation Board x1
c. GA-230 Active Antenna x1 (IPX Connector)
d. CD-ROM with technical data and GPS testing software

2.1 Evaluation Board Picture



a. RF Port 1 JR1 (Ipex)
b. Mini USB Port
c. USB/RS232 Select Switch
d. RS232 Port
e. GPS On/Off Switch
f. Test point for EB-230 signals
g. Aux RF Port 2 J1 (MMCX)

2.2 USB Setup

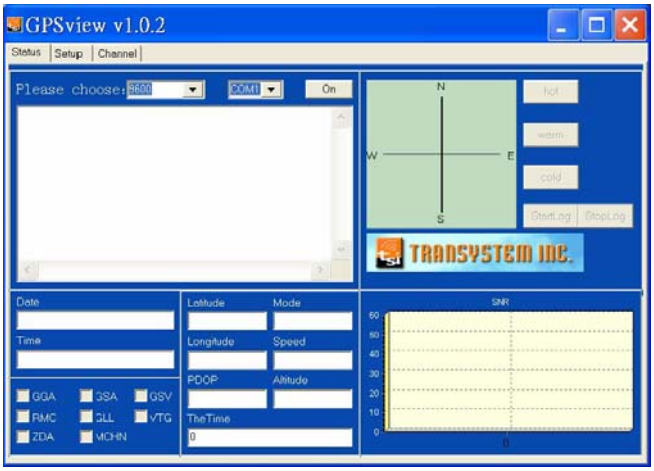
a. Plug active antenna into the external antenna connector JR1 (IPX connector, R5 = 0 Ohm, R6 = Open)
b. Connect USB cable between EB-230 Evaluation board and PC
c. Turn SW1 to " USB " position
d. Turn SW2 to " GPS On " position

Note: When AUX RF Port 2 (MMCX) is required, rework R5 = Open, R6 = 0 Ohm.

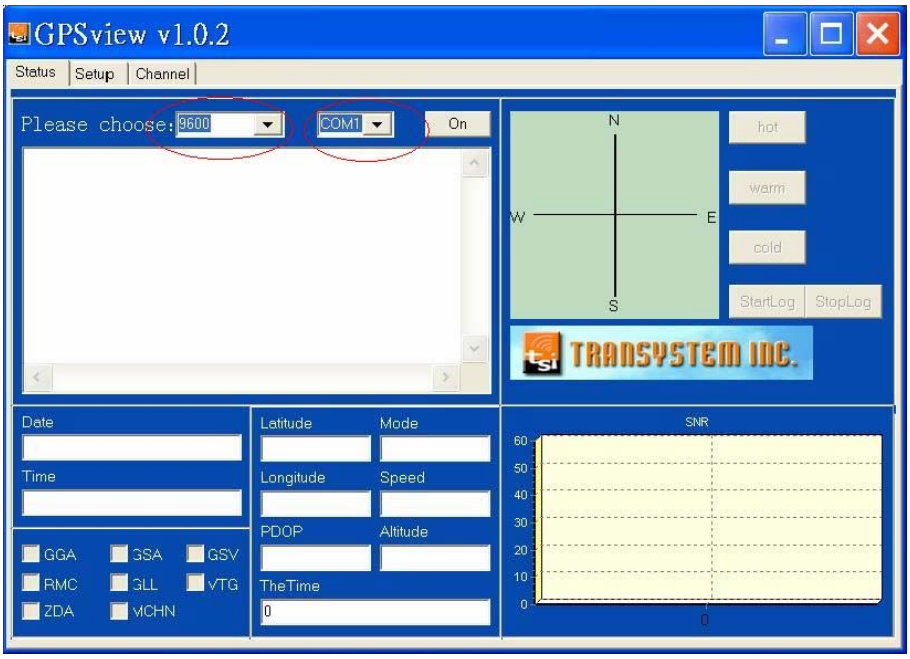
3 GPS Testing Software

a. Check the COM port number from Device Manager in your PC first.
b. Place CD-ROM into your CD drive.
c. Install CP2101 driver for USB port from CD-ROM.
d. Double click GPSView.exe

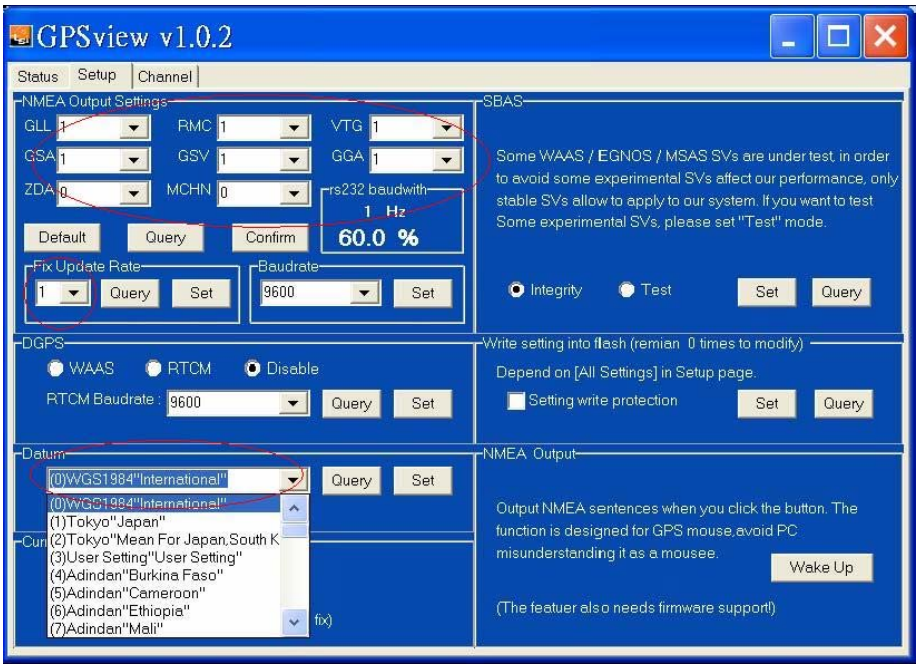
e. Following main page will show on your screen.



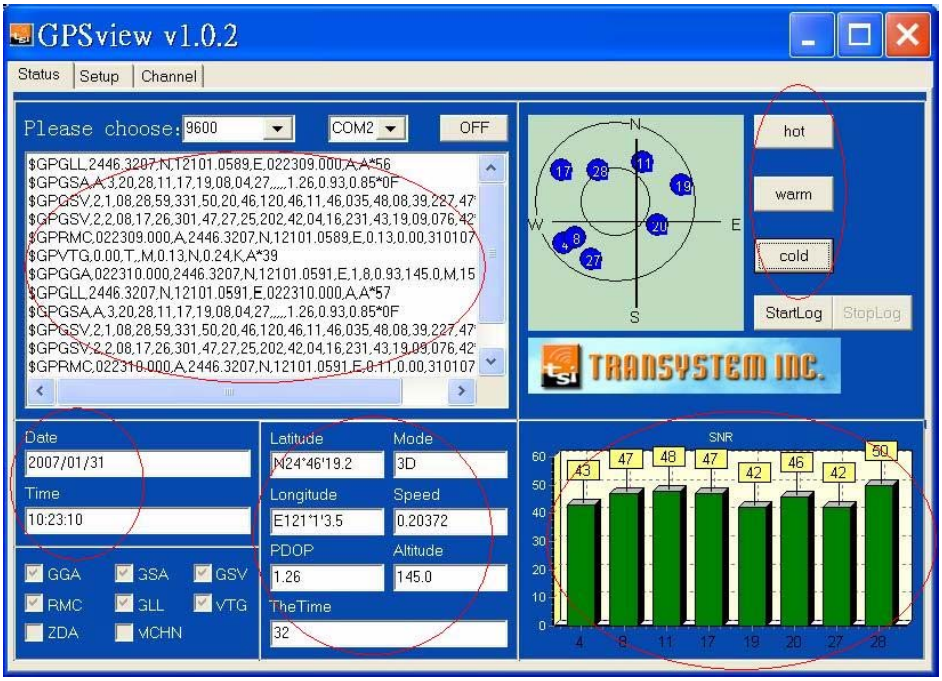
f. Select baud rate and serial port.
Default setting for EB-230 is 9600bps and COM1.



g. Click “Setup” tap, more options for your choice of NMEA output, update rate, Datum, DGPS…etc. are available through pull-down menus.



e. Go back to main page for viewing of life performance information including Date, Time, Latitude, Longitude, Altitude, Speed, Satellite number, SNR…etc.



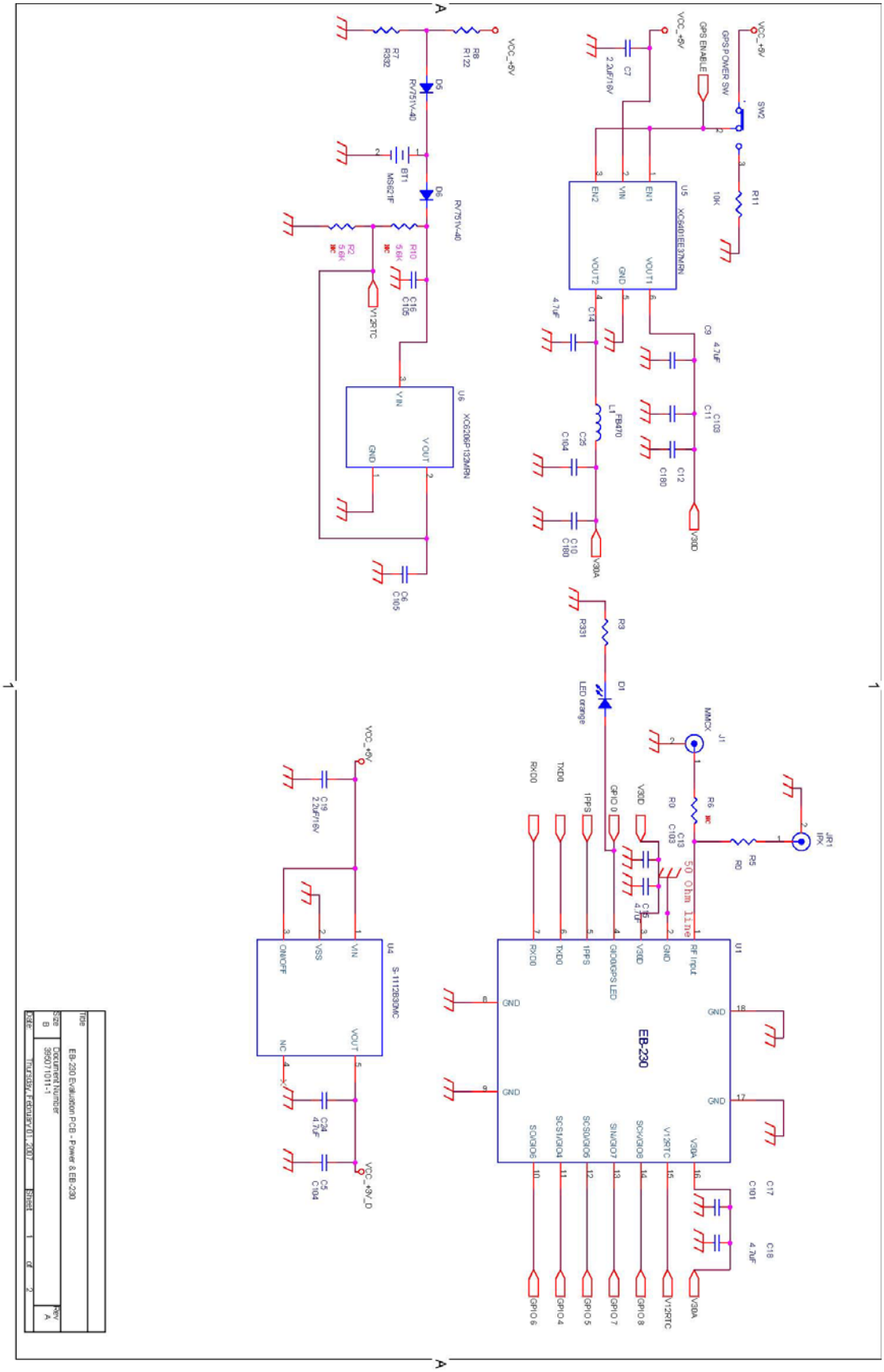
There are still more options for you to click on including : Hot (Hot Start), Warm (Warm Start), Cold (Cold Start), NMEA Log (Log the data as a *.nma file).

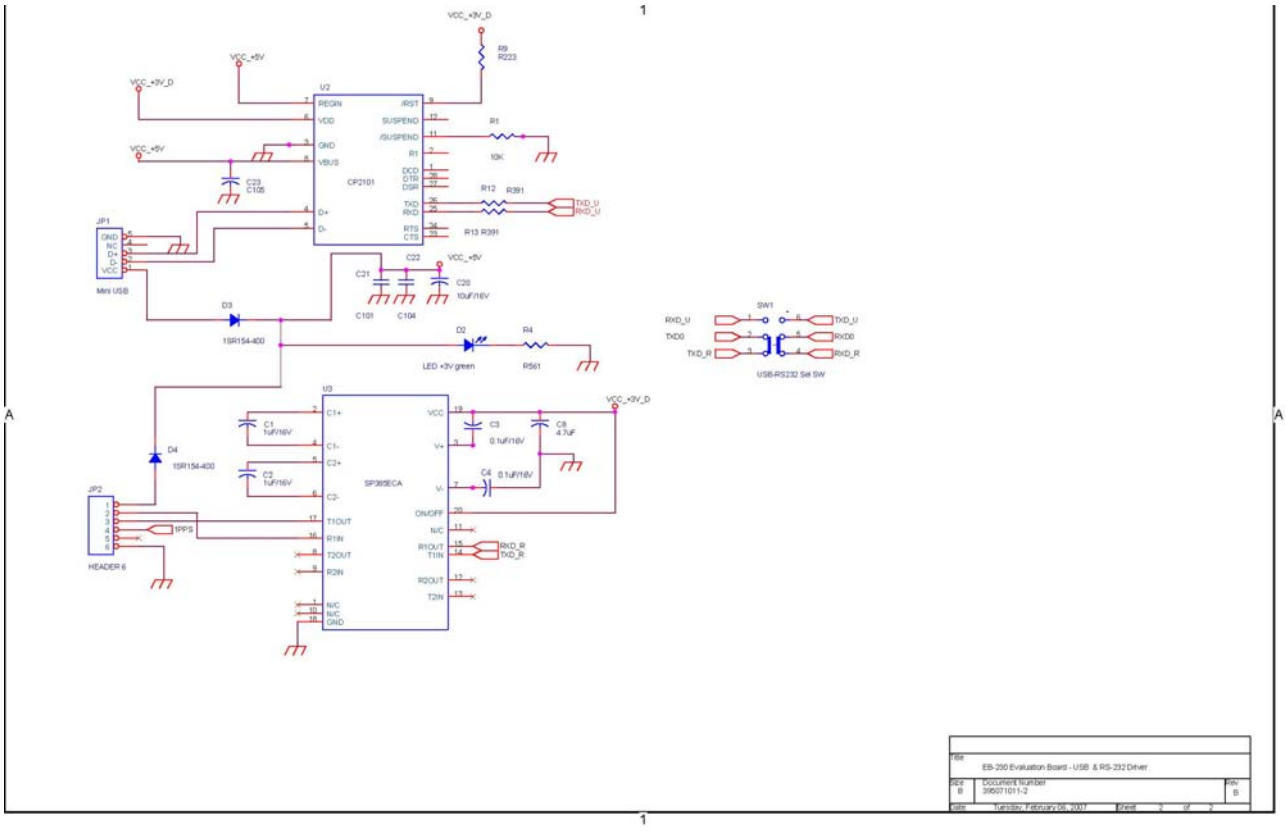
4 Connector Definition

Signal Name	Type	Description
V30A	P	Analog power supply, 3.0V±10%
V12RTC	P	RTC power 1.0~1.5Vdc, 500uA max
GPIO8/SCK	I/O	General input/ output, SPI clock
GPIO7/SIN	I/O	General input/ output, SPI data input
GPIO5/SCS0	I/O	General input/ output, SPI chip select 0
GPIO4/SSCS1	I/O	General input/ output, SPI chip select 1
GPIO6/SO	I/O	General input/ output, SPI data output
GPS Enable	I	Active high, turn SW2 to “GPS OFF” when use this pin
GND	P	Ground
V30D	P	Digital power supply, 3.0V±10%
GPS status/ GPIO0	O	GPS status, blink when GPS has position fix General input/ output
1PPS	O	1Hz pulse 10% duty cycle when GPS has position fix
TXD	O	3V CMOS level, data output from EB-230
RXD	I	3V CMOS level, data into EB-230

P: Power I: Input O: Output I/O: Input or Output, Open if not used

5 Evaluation Board Schematics




VCC_+3V_D
VCC_+5V
U2
CP2101
JP1
Mini USB
D3
1SR154-400
D2
LED +3V green
R4
R561
SW1
USB-RS232 Sel SW
U3
SP385ECA
JP2
HEADER 6
1PPS
C1
1uF/16V
C2
1uF/16V
C3
0.1uF/16V
C4
0.1uF/16V
C8
4.7uF
C20
10uF/16V
TXD_U
RXD_U
TXD_R
RXD_R
EB-230 Evaluation Board - USB & RS-232 Driver

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